

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 7, 2010 has been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

3. Applicant elected Group I, Species B in the reply filed on May 14, 2009. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
4. Claims 4, 13, 19 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention/species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on May 14, 2009.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 26-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 26 recites the limitation "10 pounds per second or less" in line 2. The specification discloses, on page 9, line 6, "10 pounds per second." The disclosure, as originally filed, does not appear to disclose "or less."

Claim 27 recites the limitation "at least 30 pounds per second" in line 2. It is uncertain whether the recitation is limited to "30 pounds per second" or is limited to a range equal to or greater than 30 pounds per second. It appears that the term "at least" defines a range. The specification discloses, on page 9, line 6, "30 pounds per second." The disclosure, as originally filed, does not appear to disclose a range having an unbounded upper end.

7. Claims 1-3, 5-12, 14-18, 20-24, 32-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "difficult" in claim 1 is a relative term which renders the claim indefinite. The term "difficult" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is uncertain what type of fire is limited by the claim.

Regarding claim 1, the preamble recites a "method" having and intended use "for treating a difficult to extinguish flammable liquid fire associated with a tank having a roof and a substantially enclosed space above liquid in the tank and below the roof." The body of the claim includes recitations directed to "a surface of the liquid within the tank" and "a space between the roof and said blanket." The preamble is directed to a subcombination of a method but the body of the claim is directed to a combination of a method, tank and liquid. Recommend deleting "for" in line 1 and replacing with --of--.

Claim 1 recites the limitation "discharging dry powder/into a space" in line 6. It is uncertain whether the "/" is a typographical error.

Claim 1 recites the limitation "a space" in line 6. It appears to be a double inclusion of the "substantially enclosed space" recited in line 2.

Claim 1 recites the limitation "structure" in line 7. There is insufficient antecedent basis for this limitation in the claim. An article appears to be missing before "structure."

The term "difficult" in claim 5 is a relative term which renders the claim indefinite. The term "difficult" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would

not be reasonably apprised of the scope of the invention. It is uncertain what type of flammable liquid is limited by the claim.

The term "difficult" in claim 8 is a relative term which renders the claim indefinite. The term "difficult" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is uncertain what type of flammable liquid is limited by the claim.

Regarding claim 8, the preamble recites a "method" having and intended use "for extinguishing a fire of a difficult to extinguish fuel or flammable liquid in an industrial scale storage tank with at least a significant fixed top roof portion and having an interior roof." The body of the claim includes recitations directed to "a surface of the liquid within the tank" and "a space between the roof and said blanket." The preamble is directed to a subcombination of a method but the body of the claim is directed to a combination of a method, tank and liquid. Recommend deleting "for" in line 1 and replacing with --of--.

Claim 8 recites the limitation "structure" in line 8. There is insufficient antecedent basis for this limitation in the claim. An article appears to be missing before "structure."

Claim 15 recites the limitation "a cavity" in line 2. It appears to be a double inclusion of the "cavity" recited in claim 8, line 4.

The term "difficult" in claim 17 is a relative term which renders the claim indefinite. The term "difficult" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the

art would not be reasonably apprised of the scope of the invention. It is uncertain what type of fire is limited by the claim.

Regarding claim 32, the preamble recites a "method" having and intended use "for extinguishing fire in an industrial scale storage tank having a fixed top roof and an interior roof." The body of the claim includes recitations directed to "a surface of the liquid within the tank" and "a space between the roof and said blanket." The preamble is directed to a subcombination of a method but the body of the claim is directed to a combination of a method, tank and liquid. Recommend deleting "for" in line 1 and replacing with --of--.

Claim Rejections - 35 USC § 102

8. Claims 1, 32-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Sharma et al. (5,573,068).

Sharma discloses a method comprising:

establishing a foam blanket over at least 90% (column 1, line 22, column 4, lines 7 and 44-46: uniform discharge for blanketing the flammable liquid, i.e., 100%);

discharging dry powder (abstract, lines 2-3, column 4, lines 47-50) into a space (space above surface 14) between the fixed roof (roof of tank 7) and the blanket (formed in the step above) through an opening (opening in the wall of tank 7 through which ring 1 is connected to valve 5) in the structure (wall) of the tank 7.

When both foam and dry chemical powder are used, the foam and powder are continuously pumped into the tank. The dry chemical powder discharged into the

space later in the process is discharged on top to the foam that was discharged initially during the process.

Sharma discloses a system comprising:

at least one foam conduit 6 (column 4, lines 14-20) in valved fluid communication (through valve 5) with an interior of the tank 7 through at least one opening (entry opening in tank 7 for conduit 6);

at least one dry chemical conduit 6 (column 4, lines 4-20) in valved fluid communication (through valve 5) with the space under the roof of the tank through said at least one opening (entry opening in tank 7 for conduit 6);

a nozzle 4.

Claim Rejections - 35 USC § 103

9. Claims 1, 2, 8-12, 14, 16, 32-35 rejected under 35 U.S.C. 103(a) as being unpatentable over Boyd (1,917,694) in view of Sharma et al. (5,573,068) and Williams et al. (5,913,366) or Foden et al. (2,996,119).

Boyd discloses a system comprising a tank 1 having roof 3, vent 13, nozzle 8.

Boyd differs from what is being claimed in the dry powder. Boyd discloses using foam.

Sharma teaches, in the abstract, lines 1-3, using foam, dry chemical powder, or both.

Williams discloses, in claims 8 and 9, applying foam then dry powder.

Foden discloses, in column 3, lines 1-10 and column 4, lines 21-31, applying foam then dry powder.

It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided foam then dry powder in the device of Boyd as taught by Sharma and Williams or Foden to completely extinguishing the flames (Foden, column 3, lines 5-6).

Response to Arguments

10. Applicant's arguments filed April 7, 2010 have been fully considered but they are not persuasive.

Applicant argues that the term "difficult" is defined in the specification on page 3, line 8-14. The specification does not provide a standard for ascertaining the requisite degree for the relative term "difficult" because it further uses relative terms "low" and "high" to define the relative term "difficult."

Applicant argues that Sharma requires two sets of rings to discharge both foam and powder. Even is such were the case, claims 1 and 32 do not preclude such a condition.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER KIM whose telephone number is (571)272-4905. The examiner can normally be reached on Monday - Friday, 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571) 272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher S. Kim/
Primary Examiner, Art Unit 3752

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